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10/563,226	06/09/2006	Tadahiro Ohmi	SUG10161	1000

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2300 NINTH STREET, SOUTH  
ARLINGTON, VA 22204

EXAMINER

PATEL, HARSHAD R

ART UNIT	PAPER NUMBER
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2855

MAIL DATE	DELIVERY MODE
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08/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/563,226

Applicant(s)

OHMI ET AL.

Examiner

Harshad Patel

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,7,9,10 and 12-16 is/are allowed.
- 6) ☒ Claim(s) 1 and 11 is/are rejected.
- 7) ☒ Claim(s) 4-6,8 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/20/06</u>   | 6) <input type="checkbox"/> Other: ____                           |

*Drawings*

1. The drawings are objected to because "P" in the equation is not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. Figures 14 and 15, seems that it should be designated by a legend such as --Prior Art-- because only that which is old is illustrated as described in the related art section of the disclosure. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities: The specification uses claim numbers that tend to change during the prosecution.

Page 5, "valve driving part" is referred by numeral "23" and "22".

Page 15, line 1, the equation is incorrect.

Pages 18-21, the list of reference characters and numerals has listing that do not have corresponding numerals referenced to.

Page 21, the equation 1 is confusing as to what is "P" defined as, i.e. "P" is not defined anywhere in the specification.

Reference numerals used in conjunction with the elements are incorrectly identified, Ex. Page 21, paragraph 0111, "orifice 1", "orifice 2", "orifice 3", etc. Appropriate correction is required. Applicant is advised to thoroughly check for all the typographical errors and language in the specification and claims to properly describe the invention.

***Claim Objections***

4. Claims 1, 2, 5, 6 and 12 are objected to because of the following informalities: The equation in these claims is incorrectly mentioned. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. At line 2, the claim refers to either one of the switching valves; however, claim 4 on which it depends refers to a single valve.

*Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Admitted Prior Art (hereinafter APA).

The APA teaches the known empirical formula as indicated below:

$$Q_c = \frac{S \cdot P_1}{\delta} \cdot \left[ \frac{2g}{RT} \cdot \frac{\kappa}{\kappa - 1} \left[ \left( \frac{P_2}{P_1} \right)^{\frac{2}{\kappa}} - \left( \frac{P_2}{P_1} \right)^{\frac{\kappa + 1}{\kappa}} \right] \right]^{\frac{1}{2}}$$

The APA teaches a differential pressure type flowmeter comprising an orifice (20), an upstream pressure detector (P1), a downstream pressure detector (P2), a fluid temperature detector (T), where in the flow rate is computed using the above-mentioned equation. The APA also teaches a flow controller comprising a control valve part equipped with a valve driving part. The empirical formula used in the claims is nothing more than the known formula as disclosed in the APA. The only difference in the claimed formula is the combine variables of the known formula formed as a constant. The "C" in the claimed formula is nothing more than the combination of "(S/δ)(2g/R)(κ/(κ-1))" and "m" and "n" are "2/κ" and "(κ+1)/κ", respectively. Thus there is no difference between the APA formula and the claimed formula. According to the known formula the gas density δ and the specific ratio of gas κ are either known or measured and being used as constants. Thus the APA teaches the claimed formula.

*Allowable Subject Matter*

9. Claims 2, 3, 7, 9, 10 and 12-16 are allowed.
10. Claims 4, 5, 6 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter:  
The prior arts made available do not teach or fairly suggest, alone or in combination, a differential pressure type flowmeter including a control computation circuit installed with a flow rate computation circuit, a correction data memory circuit and a flow rate correction computation circuit. The prior arts made available do not teach a switching structure to switch between a lower and higher range flow meters

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harshad Patel whose telephone number is (571) 272-2187. The examiner can normally be reached on Monday-Thursday (6:30 AM-5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Harshad Patel  
Primary Examiner  
Art Unit 2855

HP  
8/21/07